Creation of a Longitudinal Legal Data Set to Support Legal Epidemiology Studies of Mental Health Insurance Legislation

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Objective: This article describes policy surveillance methodology used to track changes in the comprehensiveness of state mental health insurance laws over 23 years, resulting in a data set that supports legal epidemiology studies measuring effects of these laws on mental health outcomes.

Methods: Structured policy surveillance methods, including a coding protocol, blind coding of laws in 10% of states, and consensus meetings, were used to track changes in state laws from 1997 through 2019–2020. The legal database Westlaw was used to identify relevant statutes. The legal coding instrument included six questions across four themes: parity, mandated coverage, definitions of mental health conditions, and enforcement-compliance. Points (range 0–7) were assigned to reflect the laws' comprehensiveness and aid interpretation of changes over time. **Results:** The search resulted in 147 coding time periods across 51 jurisdictions (50 states, District of Columbia). Intercoder consensus rates increased from 89% to 100% in the final round of blinded duplicate coding. Since 1997, average comprehensiveness scores increased from 1.31 to 3.82. In 1997, 41% of jurisdictions had a parity law, 28% mandated coverage, 31% defined mental health conditions, and 8% required state agency enforcement. In 2019–2020, 94% of jurisdictions had a parity law, 63% mandated coverage, 75% defined mental health conditions, and 29% required state enforcement efforts.

Conclusions: Comprehensiveness of state mental health insurance laws increased from 1997 through 2019–2020. The State Mental Health Insurance Laws Dataset will enable evaluation research on effects of comprehensive legislation and cumulative impact.

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Mental illnesses are prevalent in the United States and result in health, social, and economic costs. In 2017, 18.9% of adults (ages 18 and older) had a mental illness, with the highest proportion—25.8%—among young adults (ages 18–25) (1). Adolescents (ages 12–17) also had increasing rates of mental illness; the prevalence of major depressive episodes in this group rose from 8.66% to 13.01% between 2012 and 2017 (1). Despite the high prevalence of mental illness, over half of adults and youths with a major depressive episode did not receive treatment (1, 2). A primary barrier to treatment for adults was affordability (1).

Federal and state legislatures have a long history of attempting to improve access to high-quality mental health insurance coverage through legislation (3, 4). Major federal laws include the Mental Health Parity and Addiction Equity Act of 2008 (MHPAEA) and the Affordable Care Act of 2010 (ACA) (5). The MHPAEA, which became effective in 2009, applies to large-group health benefit plans. It does not mandate coverage in these plans, but it requires plans that cover mental health treatment to ensure equal coverage for mental health and other medical conditions (i.e., parity). The ACA, which became effective in 2014, expanded on the MHPAEA to include mental health treatment as an essential

HIGHLIGHTS

- The State Mental Health Insurance Laws Data set was developed by using a policy surveillance methodology that supports future legal epidemiology studies measuring the effect these laws and their specific provisions have had on mental health outcomes over a 23-year period.
- Comprehensiveness of state mental health insurance laws has increased since 1997.
- As of 2020, few state laws require enforcement of and compliance with state and federal mental health insurance laws.

health benefit, effectively mandating coverage in plans sold in the individual and small-group markets and required parity for Medicaid managed care plans (4, 6). In totality, these key federal laws apply to large- and small-group insurance plans, plans sold on the individual market, and Medicaid plans. However, significant gaps remain related to the types of mental health conditions covered in these plans and the enforcement of these laws by state insurance regulators and Medicaid programs.

State mental health insurance laws are a key component of comprehensive mental health treatment coverage. Prior to implementation of the MHPAEA and the ACA, state laws were the primary regulator of mental health insurance coverage. Even under the federal laws, states have significant regulatory authority to enforce the federal laws (7). In addition, the federal laws create the minimum standards for state regulation, but state laws can exceed the federal standards, which allows states to mandate mental health insurance coverage in large, fully insured plans; define mental health conditions that must be covered; and require specific enforcement and compliance activities. State laws are not necessary for implementation of the federal laws but serve to clarify, strengthen, and enforce the federal laws.

Evidence for the positive effect of state mental health insurance laws on health outcomes is robust but inconsistent. Early studies found minimal to no effect on treatment utilization, perceived access to needed services, or suicide rates (8-11). More recent studies have found associations between state laws and access to specialty treatment for substance use disorders and between state laws and suicide rates (12, 13). A systematic review conducted by Sipe et al. (14) found that overall, mental health benefits legislation increased treatment utilization and improved financial protections for people with mental health conditions. Several studies have assessed specific provisions of state laws, distinguishing between laws that mandate behavioral health benefits and those that require parity only if behavioral health benefits are offered by the plan (10, 12). Some have assessed the level of parity (no parity, partial parity, or full parity) and its impact on mental health outcomes (10, 12, 13, 15). Despite inclusion of additional legal requirements in many state laws, no empirical studies have included variables related to how states define mental health conditions or their enforcement and compliance efforts, aspects that are critical to measuring the effect of both state and federal laws. Furthermore, despite more than 30 years of legal interventions, few studies have empirically measured the cumulative effect of exposure to mental health insurance laws on health.

Legal epidemiology, the scientific study and deployment of law as a factor in the cause, distribution, and prevention of disease in a population, is an emerging field that relies on legal data developed through rigorous, transparent, and reproducible methods (16, 17). Given the complex patchwork of legal authorities across the federal and state governments responsible for enforcing and implementing mental health insurance laws, data on state-level legal variation are critical for studies measuring associations between the laws and health outcomes and as confounding variables in research studies. Data derived by using a scientifically rigorous methodology are a prerequisite for evaluation of any health intervention, yet protocol-driven data sets of legal interventions related to mental health insurance are limited. Although important for scholarly research, many available legal data sets are not formatted for empirical research studies and are limited in the variables assessed, which, in turn, limits evaluation studies (18). Research evaluating granular provisions of state laws and their impact over time is necessary to inform evidencebased policy making and requires comprehensive, longitudinal legal data sets. The purpose of this study was to develop a data set of state mental health insurance laws by using a protocol-driven, quality-controlled policy surveillance approach across six key legal provisions, enabling more nuanced legal epidemiology studies. This article describes the protocol and approach used to develop the State Mental Health Insurance Laws Dataset (SMHILD).

METHODS

Scope

To compile the SMHILD, we conducted a comprehensive survey of state mental health insurance statutes enacted on and after January 1, 1997, in all 50 states and the District of Columbia. For purposes of this study, the terms "state" and "jurisdiction" are used interchangeably. Coding was conducted from October 28, 2019, through March 24, 2020 (coding time period). Three researchers (MDD, SBW, CB) with legal training used the legal database Westlaw to search the insurance code of each jurisdiction by using the following advanced search string: mental & (parity or insurance). We used the historical notes for each law to identify materially different versions of the law over time.

Legal Coding Instrument

A legal coding instrument (LCI) was developed with guidance from subject matter experts and a review of existing literature on the basis of several factors: the most common variation found in the state statutes, themes with the most potential to affect health outcomes associated with access to treatment, and novelty within the literature (two of the themes, mental health definitions and enforcement-compliance provisions, have not been previously studied for their impact on mental health outcomes). The LCI consisted of six questions across four themes: parity, mandated coverage, mental health condition definition, and enforcement-compliance. Table 1 lists the LCI coding questions and response options.

Coding

Prior to applying the LCI to individual state laws, we reviewed all laws populated by the search for relevance and included only those related to insurance coverage for mental health treatment. Relevance was defined as including language related to the LCI themes (parity, mandated coverage, mental health condition definition, and enforcement-compliance). Because the aim was to collect laws regulating insurance coverage, laws related to licensure, reimbursement, and telemedicine were excluded. For this study, only laws related to mental health treatment, as opposed to laws specifically related to substance use disorders, were included.

We created a "master sheet" for each jurisdiction, which delineated the jurisdiction-specific coding parameters, including the insurance code citation, number of search results, relevant statutes, and legislative history for each relevant statute. For each relevant law, all current and materially different historical documents were reviewed for relevance to the LCI. Coding time periods were established on the basis of effective dates for the relevant amendments to each statute, reflecting the number of relevant amendments the state legislature adopted between 1997 and the coding date. We then applied the LCI questions to the language in effect during each of the coding time periods.

To ensure consistent interpretation and coding, the research protocol included several quality controls. We held weekly consensus meetings to compare blindly coded duplicate master sheets and discuss coding discrepancies. Consensus rates were generated for all double- and triple-coded states. For example, Delaware had three coding time periods for the six coding questions, resulting in 18 coding responses. Blind coders had different responses for two of the 18 responses, resulting in an 89% consensus rate. Diverging results were resolved by group discussion and consensus, with tie-breaking decisions made by the coding supervisor (MDD). After duplicate coding was completed, we continued to meet weekly to discuss individual coding findings. Additional duplicate coding was instituted as needed to maintain high quality and consistent coding for all jurisdictions.

Interpretation

To aid interpretation, we assigned points for each of the LCI coding responses, with the total score representing the comprehensiveness of the jurisdiction's laws (points assigned are shown in Table 1). Scores ranged from 0 to 7 for each coding time period, with 0 representing the least comprehensive law or the absence of a law and 7 representing the most comprehensive law. Affirmative responses were assigned 1 point and negative responses were assigned 0 points for five of the six LCI questions. The parity question included three response options: full, partial, and no parity. Two points were awarded for full parity, requiring coverage for mental health treatment on the same terms and conditions as other medical conditions or compliance with the federal parity law with no exceptions. One point was awarded for partial parity, requiring coverage for mental health treatment on the same terms and conditions as other medical conditions or compliance with federal parity laws with exceptions for treatment limits. Zero points were awarded for laws with no parity language or absence of a law altogether. Importantly, in this context, "comprehensiveness" is not equated with "strength." Theoretically, more comprehensive laws would

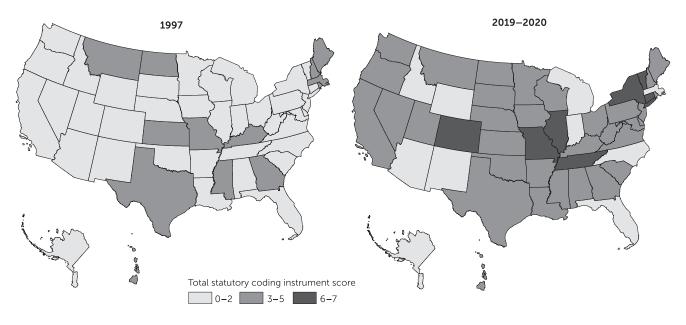
TABLE 1. State mental health insurance legal coding instrument	
(LCI)	

Question	Answer options (points assigned)
1. Does a state law require that coverage provided for treatment of mental health conditions must be on the same terms and conditions as it is for other medical coverage?	Full parity (2), partial parity (1), no parity (0)
2. Does a state law mandate health insurance or benefit plans to provide coverage for treatment of mental health conditions?	Yes (1), no (0)
3. Does a relevant state law define mental illness or mental health conditions?	Yes (1), no (0)
4. Does a state law define mental illness or mental health conditions as including all of the disorders listed in the <i>Diagnostic</i> <i>and Statistical Manual of Mental Disorders</i> or <i>International Classification of</i> <i>Diseases</i> ?	Yes (1), no (0)
5. Does a state law require the state insurance department or other relevant state agency to enforce or implement the federal parity law or state parity law?	Yes (1), no (0)
6. Does a state law require health insurance or benefit plans to submit reports to the state insurance department or other relevant state agency demonstrating how they comply with the federal parity law or any state parity law?	Yes (1), no (0)

result in better outcomes. For example, state laws that include even a limited definition of mental health conditions would be more comprehensive than state laws with no definition and even the federal laws, which allow health insurance plans to define covered conditions, by creating a floor that health plans cannot go below. However, evidence of this association across the legal variables collected in this study does not yet exist. Legal data sets like the one created here are needed to conduct studies that would yield evidence-based definitions of "strength" related to specific legal provisions.

This study had several limitations. First, it included only laws passed by state legislatures, although some jurisdictions have addressed mental health insurance through their administrative regulations. Regulations are legal requirements but are potentially more vulnerable to changes in leadership and state politics, compared with state statutes. For this reason, this study focused on legislation. Second, the statutory search was limited to the insurance code. Some insurance laws, especially those related to state employee health benefit plans and Medicaid are located in their state government or Medicaid code sections. Because this study focused on changes in commercial insurance, the search was limited to the insurance code. We did not distinguish different legal provisions across types of commercial insurance plans (large group, small group, or individual). Where conflicts across plan types arose, the provisions regulating large-group plans controlled the coding response. Third, the LCI did not assess all variation found in state laws. Some laws go well beyond the scope of

FIGURE 1. Total legal coding instrument score, 1997 and coding date (2019-2020)



the six questions conveyed by the LCI, including requirements for public awareness and in-depth regulation of nonquantitative treatment limits. Finally, it is important to note the challenges of applying an empirical coding approach to insurance laws. Unlike legal interventions intended to alter individual behaviors, such as bans on smoking in public or hands-free cell phone use while driving, insurance laws regulate an industry, and each state undertakes this complex regulation in very different ways. We attempted to develop an approach that resulted in consistent comparisons across these different regulatory schemes.

RESULTS

Master sheets resulted in 147 coding time periods across 51 jurisdictions. Intercoder consensus (ICC) rates were generated for 20% of states (N=11), with 10% of states (N=5) undergoing triple-blind coding by three authors (MDD, SBW, CB). ICC rates ranged from 89% in the first round to 100% in the final round of blinded duplicate coding.

The overall trend across the 51 jurisdictions showed that laws became more comprehensive over time. In 1997, the average comprehensiveness score of state mental health insurance laws was 1.31 (N=51), with a median score of 1. By the coding date (coding occurred October 28, 2019, through March 24, 2020), the comprehensiveness score had increased to 3.82 (N=51), with a median score of 4. In 1997, 27 jurisdictions (53%) had at least one law related to insurance coverage for mental health treatment, increasing to 48 jurisdictions (94%) by 2020. The maps in Figure 1 compare the scores on January 1, 1997, and on the coding date. On average, from January 1, 1997, through the coding date, jurisdictions had 2.57 coding time periods (range, one to five periods), with six having one and two having five coding time periods. In 1997, 21 jurisdictions (41%) had parity laws requiring that coverage for mental health treatment be on the same terms and conditions as other medical conditions, with eight of those requiring full parity and the remaining 13 requiring partial parity. By the most recent coding time period, 48 jurisdictions (94%) had at least one parity law, with 40 of those requiring full parity and the remaining eight requiring partial parity. Figure 2 compares the mental health parity provisions in 1997 and 2019–2020.

In 1997, 14 jurisdictions (28%) required certain insurance plans to cover mental health treatment. By the most recent coding time period, 32 jurisdictions (63%) required certain insurance plans to cover mental health treatment. In 1997, 16 jurisdictions (31%) defined mental health conditions, with five jurisdictions (10%) defining mental health conditions as including all conditions listed in the *DSM*. By the most recent coding time period, 38 jurisdictions (75%) defined mental health conditions, with 17 (33%) defining mental health conditions as including all conditions listed in the *DSM*.

In 1997, four jurisdictions (8%) required the insurance commissioner or another state agency to enforce the state or federal parity laws. By the coding date, 15 jurisdictions (29%) required the insurance commissioner or another state agency to enforce the state or federal parity laws. In 1997, no jurisdictions required health plans to report on their parity compliance efforts. By the coding date, five jurisdictions (10%) required health plans to report on their parity compliance efforts.

DISCUSSION

This study identified high levels of variation in mental health insurance laws across 50 states and the District of Columbia

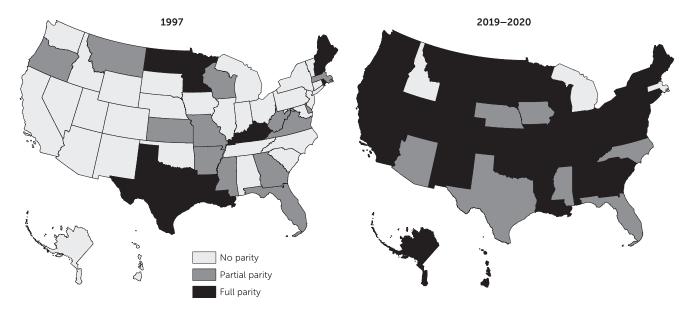


FIGURE 2. Mental health parity provisions, 1997 and coding date (2019-2020)

and found improved comprehensiveness between 1997 and 2019-2020. In 2019-2020, most jurisdictions required parity, mandated coverage, and defined mental health conditions. Despite changes over time that improved comprehensiveness, several gaps remain, especially for people diagnosed as having mental health conditions not defined in the law (19). Historically, this problem has been highlighted by coverage exclusions for treatment of autism and eating disorders (20, 21). State laws defining the conditions for which parity applies provide minimum coverage parameters that federal laws do not (4). This study found that only 17 jurisdictions defined mental health conditions to include all conditions in the DSM. Jurisdictions that defined mental health conditions but did not include the DSM definition adopted various forms of definitions. Some listed specific conditions, such as schizophrenia and bipolar disorder, and other laws referenced the DSM but excluded certain conditions, such as substance use disorders or eating disorders. These less inclusive definitions could leave some conditions without coverage. Some laws created their own definitions, which may or may not be derived from evidence-based medical standards. The MHPAEA increased treatment utilization for people with eating disorders and autism (21, 22), but further research is needed to understand whether more inclusive definitions are associated with increased treatment access or improved health outcomes for people with specific mental health conditions.

Enforcement of state and federal mental health insurance laws continues to be a challenge (23). Parity compliance is monitored by several different state and federal agencies, resulting in a complex patchwork of regulatory authority and variation in whether and to what extent states conduct enforcement activities (24). As demonstrated by parity litigation, the onus of enforcement often falls on consumers, who are mostly unaware that parity is required (25, 26). Consumers

experiencing a parity violation are often forced to challenge denials of care and pay for or go without needed services while navigating the appeals process. Despite existing parity laws, people with mental health conditions continue to utilize out-of-network services at higher rates, have limited access to adequate provider networks, and are often confronted with strict utilization review protocols (27). Enforcement and compliance provisions were rarely included in legislation, with only 15 jurisdictions requiring the state insurance commissioner to enforce state or federal laws and only five requiring health plans to submit reports demonstrating their compliance. However, incorporation of enforcement and compliance language in laws is a more recent trend that will likely continue, especially as lawsuits and advocacy efforts highlight parity violations. State laws are not necessary for robust enforcement but indicate a prioritization by legislatures to ensure compliance. These findings are ripe for further investigation to determine whether state enforcement mandates lead to better compliance and access to treatment.

When considering the effect of legislation with less immediate outcomes, such as mental health insurance laws, research teams should consider using the SMHILD to evaluate the effect that cumulative exposure to mental health insurance has on mental health outcomes. A recent study looking at cumulative effects of health insurance coverage found that for each additional 2 years of coverage, self-reported fair or poor health in the sample was reduced by 10% (28). The SMHILD can support studies exploring the cumulative effect of mental health insurance laws. Future research should consider not only individual and family mental health and sociodemographic characteristics but also the state environment and policy solutions that foster or inhibit access to mental health treatment.

CONCLUSIONS

This study provided granular, longitudinal legal data needed to evaluate the population health effects of mental health insurance laws. The SMHILD provides nuanced legal variables across a longitudinal period, filling current gaps in legal data related to the comprehensiveness, enforcement, and compliance provisions contained in state laws.

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